

## INTRODUCTION

# THE DIGITAL DIVIDE: EMPLOYMENT AND DEVELOPMENT IMPLICATIONS

The gaps and imbalances between industrialized and developing countries in a number of economic and social spheres are vast and increasing. In 1960, per capita GDP in the richest 20 countries was 14 times that in the poorest 20 countries. By 1998, the gap had widened to 34 times.<sup>1</sup> The gap in employment opportunities between the industrialized and developing countries also continued to remain wide over the past five years. Of the world's 137 million unemployed in 1995, 29 million were to be found in the industrialized countries.<sup>2</sup> By the end of 2000, the global unemployment level had increased to 160 million persons, 50 million of whom were in the industrialized countries. In addition to providing employment for this huge number of unemployed workers, the global economy needs to generate jobs for 500 million new entrants to the labour force over the next ten years.<sup>3</sup> The gap between the North and the South is also widening in respect of global resource flows, which provide the investments vital for reducing disparities in incomes and job creation between capital-rich industrialized countries and labour-abundant developing countries. During the period 1993-97, 38 per cent of the world's total foreign direct investment went to developing countries. In 1999 this share dropped to 24 per cent.<sup>4</sup> Given the huge and growing gap in incomes, employment opportunities and investments, it is hardly surprising that the huge digital divide between industrialized and developing countries has continued to widen over recent years. In October 1997, there

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<sup>1</sup> ILO: *Reducing the decent work deficit: A global challenge*, Report of the Director-General, International Labour Conference, 89th Session, Geneva, 2001.

<sup>2</sup> Farhad Mehran: "Estimation of world and regional unemployment", in ILO: *Bulletin of Labour Statistics* (Geneva), No. 4 (1999).

<sup>3</sup> ILO: *World Employment Report 2001: Life at work in the information economy*, Geneva, ILO, 2001.

<sup>4</sup> ILO: *Reducing the decent work deficit: A global challenge*, op. cit.

were only 23 Internet hosts per 1,000 inhabitants in OECD countries, as compared to 0.21 per 1,000 inhabitants outside the OECD area.<sup>5</sup> By October 2000, the first figure had jumped to 82 in the OECD area in contrast to a meagre 0.85 Internet hosts per 1,000 inhabitants in the non-OECD countries.<sup>6</sup> However, there are signs that the Asian region has recorded some increase in its global share of Internet users in recent years.

The digital divide is more pronounced in access to personal computers and Internet use (owing to higher costs) than it is in access to telephones, which are a prerequisite for access to the Internet. High-income countries have 22 times as many telephone lines per 100 inhabitants as low-income countries, but 96 times as many computers and 102 times as many Internet users. While the gender divide in Internet use in the United States has narrowed, a meagre 25 per cent of Internet users in the European Union are women. The proportions are 18 per cent in Japan, 19 per cent in the Russian Federation and 4 per cent in the Middle East.<sup>7</sup>

Based on the findings (and selected background papers) of the ILO's *World Employment Report 2001: Life at work in the information economy*, this special issue of the *International Labour Review* on the digital divide addresses the following questions in the light of the above inter-related socio-economic, resource and technological gaps between industrialized and developing countries. Can the use of information and communication technologies (ICTs) accelerate economic growth? What is the likely impact of the ICT revolution on the quantity, quality and location of work? How will it affect the labour market? Will the current pace of change in ICTs further widen the digital divide and worsen the prevailing patterns of income and social inequalities between countries?

Since there is a real danger of the digital divide perpetuating social and economic inequality between the rich and poor countries, this issue of the *Review* also addresses the question of what needs to be done to narrow, bridge and eventually close the digital divide between industrialized and developing countries.

The evidence of a close association between Internet use and per capita national income furnished in this issue of the *Review* points to ICTs' potential for promoting economic growth. This prospect is reinforced by the finding (though limited to OECD countries) that multi-factor productivity growth is also positively associated with ICT use.

Since empirical knowledge of the ICT revolution and its socio-economic and employment impact is still in its infancy (as evidenced by the fact that barely 6 per cent of the world's population have ever logged in to the

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<sup>5</sup> An Internet host is a computer connected to the Internet that can both access and be accessed.

<sup>6</sup> OECD: *Understanding the digital divide*, OECD, Paris, 2001.

<sup>7</sup> ILO: *World Employment Report 2001*, op. cit.

Internet and half the world's population has yet to make a phone call), the impact of ICTs on society and employment had to be assessed almost exclusively from the limited evidence available on industrialized countries, where 85 to 95 per cent of the world's Internet users are to be found.

In the opening article by *Duncan Campbell*, cross-country data on the OECD countries show positive relationships both between ICT use and employment growth and between the share of computer-users in the labour force (serving as a proxy for ICT use) and employment growth. It is postulated that the labour market may benefit through improvements in job-search efficiency. Online job search may speed up the matching process over wider geographical areas and is expected to be a factor in lowering the level of unemployment.<sup>8</sup>

Apart from data limitations, the article by *Luc Soete* describes the methodological difficulties of predicting and quantifying the exact employment impact of ICT use on the aggregate and across sectors and occupations in an emerging information society like Europe's. However, the author is, on the whole, optimistic about the inherent, long-term welfare and employment opportunities, after taking into account the direct and indirect employment effects as well as the employment creation and destruction effects of ICT use. Though ICT use leads to growth in both productivity and output, the author argues that faster growth in the latter will generate growth in employment, provided the regulatory, institutional and macroeconomic environments are appropriate.

The article by *Jill Rubery* and *Damian Grimshaw* evaluates both the positive and the negative impacts of ICT use on three dimensions of job quality: employment relations and employment protection; time and work autonomy; and skills, work organization and job prospects. For instance, pessimists argue that ICT use undermines internal career ladders through the dismantling of hierarchical forms of management, and creates flexible employment relationships which erode employment rights and opportunities for freedom of association. Optimists, by contrast, argue that ICT use creates opportunities for new, flexible and boundary-less careers. But again, pessimists warn that work takes over the life of ICT users (pressure to work everywhere, all the time), who also suffer from isolation and stress (working at different times and places). To this, optimists respond by claiming that ICTs enable work to be integrated with and subordinated to daily life (work adjusted to the needs of the family) and that they interconnect and stimulate individual ICT users.

There are also both pessimistic and optimistic views on the prospects for overcoming the digital divide. Pessimism arises from the complexity and magnitude of the numerous obstacles that developing countries have to over-

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<sup>8</sup> See, for instance, David H. Autor: "Wiring the labour market", in *Journal of Economic Perspectives* (Nashville, TN), Vol. 15, No. 1 (Winter), 2001.

come in order to narrow the divide.<sup>9</sup> The costs of ICTs are certainly a major constraint on Internet use in low-income countries. International cross-section data compiled in this issue of the *Review* show an inverse relationship between access charges (telephone calls and Internet service provision fees) and Internet use. Evidence from European countries confirms a strong positive correlation (0.77) between educational attainment and ICT use.

In his article on the basis of fifteen national case studies, *Duncan Campbell* also provides insights into the policy interventions that would be needed in three areas in order to narrow the digital divide between industrialized and developing countries. These relate to education and skills, industry and trade policy, and telecommunications infrastructure.

The article by *W. Edward Steinmueller* boldly suggests that ICTs have the potential to support the development strategy of "leapfrogging", whereby developing countries could bypass stages in the accumulation of human capabilities and fixed investment previously required for their economic development, and for narrowing the gaps in productivity and output levels between industrialized and developing countries. The author analytically and empirically supports the claim that technological leapfrogging in the production and use of ICTs is feasible, opening up the prospect of narrowing not only the digital divide but also the economic divide between the developing and industrialized countries.

Finally, though this issue of the *Review* focuses exclusively on the digital divide between industrialized and developing countries, it is important not to ignore the lessons learned from the emerging evidence on the digital divide between different population groups within individual OECD countries based on income, gender, age, ethnicity, educational attainment, place of residence and scale of economic activity.<sup>10</sup>

The *Books* section begins with a review of a book on the interrelationship between private property, social property and "ownership of self", which is of interest for issues of social integration in Europe and of endemic or resurgent poverty in developing countries. Three other books reviewed relate directly to the theme of this special issue of the *Review*. The first book is of special interest to business executives and analysts and focuses on how information flows affect economic behaviour and business structures in the age of the "Digital Revolution" and the Internet. The argument propounded by the second book, that excessive reliance on the information economy (equated uniquely with the knowledge-based service sector) in the United States as the engine of growth could lead to an overall economic decline, does not explicitly recognize the way the use of ICTs have successfully transformed the manufacturing sector, as well. The third book examines the evolution of

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<sup>9</sup> Scepticism has been noted for the prospect of overcoming the digital divide that is observed within societies of OECD countries. See, for instance, Tim Jackson: "The dubious digital divide", in the *Financial Times*, 20 Mar. 2001.

<sup>10</sup> OECD, op. cit., and ILO: *World Employment Report 2001*, op. cit.

women's employment, gender relations and the quality of women's jobs, following the widespread use of ICTs.

The first of the nine books in the *Recent books* section critically examines alternate hypotheses about the impact on the notion of public service of developments in employment relations in the public and private sectors. The second book, on the new economy, deals with the growth and distributional implications of the widespread use of ICTs in the United States. Different aspects of the sociology of work are explored in the third book reviewed. The consequences of the phenomenon of moral harassment (also known as mobbing) are the subject of two books, which also identify measures for dealing with it in the European context. The sixth book critically evaluates the links between work and welfare following the wide-ranging reforms of welfare systems adopted recently in the United States and France. The seventh review reports on the publication in English of an influential report prepared for the European Commission, dealing with the transformation of work and its implications for the future of labour law in Europe. The eighth book analyses the forms and consequences of changes in time-related aspects of work on the productive sphere, in life and on society in general. The last book featured provides a comprehensive analysis of the social, economic, and employment and labour market implications of the use of ICTs.

*New ILO publications* includes two reports prepared for the International Labour Conference, 89th Session, 2001: *Stopping forced labour: Global Report under the Follow-up to the ILO Declaration on Fundamental Principles and Rights at Work* and *Reducing the decent work deficit: A global challenge* (Report of the Director-General). Other ILO publications consist of books on breaking through the glass ceiling on women's share in management positions; policy studies on the informal economy in Francophone Africa, on changing labour markets in Europe, and on attaining the goal of full employment; a review of the impact on the region's labour market responses to and lessons learned from the East Asian economic crisis, analysis of the social pillars of globalization in moving towards a socially sustainable world economy, and a review of life at work in the information economy in the *World Employment Report 2001*, which forms the basis of this special issue of the *Review*.